

REMARKS

Applicants respectfully request reconsideration of the present case in view of the above amendments and the following remarks.

Applicants thank the Examiner for indicating that claims 45-49, 51, 53, 55 and 56-60 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second and first paragraph set forth in the Office Action, and to include all of the limitations of the base claim and any intervening claims.

Claim 51 has been canceled. Claims 40-41, 43-44, 50, 52, 54, 56, 59, and 60 have been amended. No new matter has been inserted. Claims 40-50, and 52-60 are currently pending. Support for the amendment of claim 40 can be found in the specification at page 22, lines 11-23. Support for the amendment of claims 41 and 43 can be found in the specification at page 24, lines 12-23. Support for the amendment of claim 44 can be found in the specification at page 22, line 29 through page 23, line 9. Support for the amendment of claim 50 can be found in claim 51. Support for the amendment of claims 52 and 54 can be found in the specification at page 24, lines 12-23, where various substitutions for cysteine are described. Support for the amendment of claims 56, 59, and 60 can be found in claims 56, 59, and 60.

The Examiner indicated that the necessary reference to the prior application was missing and that the status of all nonprovisional parent applications referenced should be included. It is respectfully submitted that the prior application information was originally inserted by way of the Divisional Transmittal form filed on July 22, 2003, (at page 2). Accordingly, Applicants are only updating this information by inserting the current status of the parent applications.

The specification was objected to because of informalities in the Brief Description of the Drawings regarding Figure 4, Figure 5, and Figure 6. Appropriate corrections have been made.

35 U.S.C. § 112, second paragraph

Claims 40-60 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Specifically, the Examiner states that claims 40-44, 50, 52 and 54 are indefinite because the

claim fails to teach what the particular residue should be substituted with. Applicants respectfully traverse this rejection.

While not conceding the correctness of Examiner's position, in the interest of advancing prosecution, Applicants have amended claims 40-41, 43-44, 50, 52, 54 to recite specific amino acids that may be used for substitution. Further, claim 42 is sufficiently definite as it depends on claim 40 which is sufficiently definite.

To the extent that the Examiner maintains this rejection, Applicants point out that "breadth of a claim is not to be equated with indefiniteness." *See* MPEP § 2173.04; *In re Miller*, 169 USPQ 597 (C.C.P.A. 1971). Therefore, the fact that specific amino acids are not recited as substitutions would not serve to render the claim indefinite. Applicants respectfully request that this rejection be withdrawn.

Claims 56, 59, and 60 were rejected as vague due to the phrase "a polynucleotide having the portion of sequence SEQ ID NO: 12 that encodes a polypeptide having the sequence of SEQ ID NO: 14." Applicants respectfully traverse this rejection.

While not conceding the correctness of Examiner's position, in the interest of advancing prosecution, Applicants have amended claims 56, 59, and 60, in order to obviate this rejection. Applicants respectfully request that this rejection be withdrawn.

35 U.S.C. § 112, first paragraph

Claims 40-44, 50, 52 and 54 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully traverse this rejection.

Specifically, the Examiner states that claims that allow for open-ended changes, i.e., those that do not recite what the specific substitution can be, are not enabled. Applicants submit that it is reasonably predictable that substitutions at specific residues will function. Therefore, Applicants submit that one of skill in the art is enabled to practice the full scope of the invention as previously claimed.

However, while not conceding the correctness of Examiner's position, in the interest of advancing prosecution, Applicants have amended claims 40-41, 43-44, 50, 52, 54 to recite specific amino acids that may be used for substitution.

Based on the specification, it is predictable that these specific substitutions will function such that one of skill in the art is enabled to practice the full scope of the invention as now claimed. For example, claim 40 recites "aspartic acid, glutamic acid, lysine, or arginine substituted for asparagine-20." The specification provides that in addition to aspartic acid, changing asparagine-20 to charged amino acids such as glutamic acid, lysine, or arginine is likely to be effective. Similarly, claims 41, 43-44, 50, 52, and 54 also recite specific amino acids for substitution. Therefore, claims 40-41, 43-44, 50, 52, and 54 are fully enabled.


Claim 42 depends on claim 40. Claim 42 adds a substitution at aspartic acid-45 to the features of claim 40. It is reasonably predictable that the substitution at aspartic acid-45 will not negate the function of the isolated nucleic acid molecule of claim 40. Therefore, claim 42 is also fully enabled. Applicants respectfully request that this rejection be withdrawn.

Summary

In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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Date



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